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Innovation Policy Learning

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Definition

The term innovation policy learning stands for the change of innovation policy-relevant knowledge, skills, or attitudes, which are the results of the assessment of past, present, or possible future policies (Biegelbauer 2013).

Emergence of the Term and Development of Research

The approaches utilizing notions of policy learning share a conviction that the activities of policy-makers can be explained by understanding these actions in terms of feedback cycles used in order to assess previous actions. Policy-makers engage in learning in order to make sense of the world they live in, to gain a better understanding of the effects of their policies, and to arrive at better decisions in the future.

The notion “innovation policy learning” can be traced back to two different discussions, one rooted in political science and the other in economics. In political science, learning has been discussed as a category of policy analysis since

the 1960s, when Karl Deutsch introduced his cybernetics of government (Deutsch 1966). Another milestone for the development of the term was Hugh Heclo’s book on British and Swedish social policy (1974), in which he writes: “Governments not only, ‘power’ ... they also puzzle. Policy-making is a form of collective puzzlement on societies behalf” (Heclo 1974, 305). With this terminology, he captured one of the basic premises of the discussion on policy learning, namely, that political action cannot be explained alone by looking at interests and institutions and how they relate to power, which would be the classical categories of political science. Rather policy-makers also engage into efforts to solve what they perceive to be policy problems (Bandelow 2003; Biegelbauer 2013).

Similarly influential is the “advocacy coalition framework”, developed mainly by Paul Sabatier (Sabatier and Weible 2007). In this framework, political processes are located in policy subfields, which are characterized by competing advocacy coalitions that may or may not change their belief structures through learning. At about the same time Peter Hall found that the change from Keynesian to monetarist economic policies in the early 1980s was best explained through social learning. His theory engulfs three targets of policy change, settings of policy instruments, policy instruments themselves, and finally policy paradigms, which are the ideational structure policies are embedded in and which most importantly explain the scope and the workings of policies. Social learning proper encompasses

the change of policy paradigms, something happening only rarely (Hall 1993).

In the 2000s, policy learning approaches have been further developed, through, for example, critique of key terms (Maier et al. 2003), the further expansion of concepts of social learning (Oliver and Pemberton 2004), the advocacy coalition framework (Sabatier and Weible 2007), and of interpretative approaches (Grin and Loeber 2007), which also have integrated ideas from organizational sociology (Argyris and Schön 1978).

The second debate in which the term innovation policy learning is rooted stems from evolutionary economics. Neoclassic economic theory originally has exogenized innovation as a factor of economic development (Biegelbauer 2000). Yet with a number of empirical studies analyzing the production factors' input on growth carried out in search for new growth models, a new set of models was created in the late 1970s (Rosenberg et al. 1992). Joseph Schumpeter's vision of a dynamic and evolutionary economy (Schumpeter 1971) was integrated into a number of studies (e.g., Nelson and Winter 1982; Carayannis and Ziemnowicz 2007), which transcended the disciplinary boundaries of economics and led to a view of economic growth and technological change, which has increasingly been rivaling the neoclassical economic model ever since.

The key difference between the old neoclassical models and the newer Schumpeterian ones is that the latter are more dynamic in their evolutionary perspectives (Hofer 2003). With regard to technological change, this means an endogenization of the innovation process. Similar to the neoclassical model, the new models see technological change as the main driving factor for economic growth. However, since the new models are interested in explaining technological change, they assume the production function to include factors such as the level of technology or more broadly the stock of knowledge, investments into R&D, skills of the work force (human capital), indicators of the complexity of institutional arrangements, and the like, aside physical capital (Biegelbauer 2000).

In evolutionary economics, an important mechanism for the creation of knowledge and skills is learning. This notion has been developed especially by Bengt-Age Lundvall's concept of the "learning economy" (Lundvall 1992). Lundvall has differentiated between different forms of knowledge and skills, some of which had been rather neglected by economic theorizing before. This is especially the case with non-codified knowledge which accrues through "learning by doing" and forms an important knowledge base upon which a lot of innovation activities are based.

The wider framework of Lundvall's conception of a learning economy is the concept of "national systems of innovation" (Freeman 1987; Lundvall 1992; Nelson 1993), "the network of institutions in the public and the private sectors whose activities and interactions initiate, import, modify and diffuse new technologies" (Freeman 1987).

The notions of learning economies and national systems of innovation transformed in an ongoing process what was before science, technology, higher education, and industry policies into innovation policy (Biegelbauer and Borrás 2003; Edler 2003; Carayannis and Campbell 2006). This move impacts on the selection of policies as well as on the ways policies are perceived. Policy instruments have become more complex and are constructed to fulfill a multitude of purposes for the needs of a multitude of actors, and their effects are expected to be systemic (Kuhlmann and Smits 2004; Weber 2009). These changes have been interpreted as policy learning closely connected to the developments in the area of evolutionary economic innovation theory (Mytelka and Smith 2001).

Ramifications for Innovation Policy and Policy Analysis

A number of policy instruments have been devised to foster policy learning: evaluations, benchmarks, foresight exercises, impact assessments, expert commissions, and studies have

155 been utilized to make policy-making ever more
 156 evidence-based and rational (Biegelbauer 2007,
 157 2009; Biegelbauer and Mayer 2008).

158 Especially the European Union has built
 159 a whole learning architecture as part of the
 160 Lisbon Agenda and the Strategy 2020, both
 161 featuring the main goal of making the EU the
 162 most innovative and competitive region of
 163 the world. These strategies make use of the
 164 open method of coordination and its plethora of
 165 learning instruments. The exact nature of the
 166 open method of coordination, for example, the
 167 degree of its formality, differs from policy field to
 168 policy field (Borrás and Greve 2004; Borrás and
 169 Radaelli 2011). In RTDI policy, it engulfs
 170 a variety of rather informal networks, projects,
 171 and platforms in which experiences with RTDI
 172 policy-making are to be analyzed and exchanged
 173 (Lisbon Expert Group 2009). An important role
 174 plays a set of indicators, the Innovation Union
 175 Scoreboard, which has been developed in order to
 176 ease a systematic comparison of the EU member
 177 states' experiences – the Innovation Union
 178 Scoreboard covers the 27 EU member and 7
 179 additional countries with 25 innovation
 180 research-related indicators as part of the EU's
 181 Strategy 2020, which has replaced the EU Lisbon
 182 Agenda in 2010 (Biegelbauer 2012).

183 In the 2000s, efforts have been made to
 184 integrate the two strands of research described
 185 here, one from political science and another one
 186 from evolutionary economics, in order to
 187 better understand innovation policy learning.
 188 This has taken the form of historical analyses of
 189 innovation systems and innovation policy on
 190 national (Biegelbauer 2000) and supranational
 191 (Edler 2003) levels, of comparisons of national
 192 systems of innovation (Biegelbauer and Borrás
 193 2003), analyses of the relation between innova-
 194 tion theory and policy development (Mytelka and
 195 Smith 2001), critique of (naïve) benchmarking
 196 exercises (Lundvall and Tomlinson 2001), and
 197 the open method of coordination in innovation
 198 policy (Lisbon Expert Group 2009).

Conclusions and Future Directions

199

200 From the research on innovation policy learning,
 201 several conclusions can be drawn for the further
 202 development of policy analysis. First of all, the
 203 concentration in the research field on rational
 204 decision-making in the sense of the maximization
 205 of personal utility should be balanced with other
 206 perspectives on decision-making processes. Pol-
 207 icy-making is not only about a quest for power
 208 and influence, it is also about gaining knowledge,
 209 solving problems, and dealing with historically
 210 contingent norms and practices in the form of
 211 institutions, discourses, and culture (Gottweis
 1998; Prainsack 2011).

212
 213 Second, these different factors, for example,
 214 interests, cognition, institutions, discourses, and
 215 cultures, all play a role in the policy-making
 216 process, which is much messier, less sequential,
 217 and rational as usually depicted in the statements
 218 of politicians, accounts of journalists, but also
 219 social scientists (Hoppe 2009; Biegelbauer 2013).

220 Third, there is an urgent need for a fine-grained
 221 empirically driven policy analysis recognizing
 222 the messiness of decision-making processes
 223 instead of producing more schematic depictions
 224 of policy-making utilizing models of lower
 225 solution. Such a policy analysis could lead to a
 226 deeper understanding of the interplay of factors
 227 leading to policies and stay closer to accounts of
 228 policy-making one can hear from policy workers
 229 once the microphone has been turned off. Such a
 230 policy analysis could further our understanding
 231 of policy-making, and it moreover would be
 232 also useful for providing orientation and reflec-
 233 tion knowledge for politicians and civil servants.

Cross-References

234

- 235 ► Innovation Policies
- 236 ► Innovation Systems and Entrepreneurship
- 237 ► Joseph A. Schumpeter and Innovation
- 238 ► National Innovation System/National
- 239 Innovations Systems

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